DEPARTMENT OF TRANSPORTATION
DIVISION OF ENGINEERING SERVICES
Office of Structural Materials
Quality Assurance and Source Inspection

Bay Area Branch
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Contract #: 04-0120F4
Cty: SF/ALA Rte: 80 PM: 13.2/13.9
File #: 69.28

WELDING INSPECTION REPORT

Resident Engineer: Pursell, Gary
Address: 333 Burma Road
City: Oakland, CA 94607

Report No: WIR-002911
Date Inspected: 11-Jun-2008

Project Name: SAS Superstructure
Prime Contractor: American Bridge/Fluor Enterprises, a JV
Contractor: Zhenhua Port Machinery Company, Ltd (ZPMC), Changxing Island

OSM Arrival Time: 630
OSM Departure Time: 1530
Location: Shanghai, China

CWI Name: Hu Wei Qing and Lvliqing

Inspected CWI report:	☐	Yes	☑	No	☐	N/A		
Electrode to specification:	☑	Yes	☐	No	☐	N/A		
Qualified Welders:	☑	Yes	☐	No	☐	N/A		
Approved Drawings:	☑	Yes	☐	No	☐	N/A		

CWI Present:	☑	Yes	☐	No				
Rod Oven in Use:	☑	Yes	☐	No	☐	N/A		
Weld Procedures Followed:	☑	Yes	☐	No	☐	N/A		
Verified Joint Fit-up:	☑	Yes	☐	No	☐	N/A		
Approved WPS:	☑	Yes	☐	No	☐	N/A		
Delayed / Cancelled:	☐	Yes	☑	No	☐	N/A		

Bridge No: 34-0006
Component: OBG and SAS Tower Fabrication

Summary of Items Observed:

On this date, Caltrans Office of Structural Material (OSM) Quality Assurance (QA) Inspector Joselito Lizardo was present as requested to perform observations on the fabrication of Orthotropic Box Girder (OBG) and SAS Tower at Zhenhua Port Machinery Company (ZPMC) facility at Changxing Island, in Shanghai, China.

The QA Inspector has randomly observed the following activities on these Bays mentioned below;

Bay 7: OBG - Floor Beam Sub Assembly:
This QA Inspector observed skewed connection plate to be welded CJP to the bottom flange of floor beam sub-assembly that was previously reported unacceptable due to its short in length and unauthorized butter weld that was done to increase its length is now changed. The weld joint involved is marked SSD9A-PP019A-133.

The QA Inspector observed deep gouges at the edge of flange of longitudinal diaphragm sub-assembly LD019-001-012, LD001-001-012 and LD020-001-012 due to gas cutting. ABF Inspector David Larue was present assessing the situation and taking some photos for record purposes. Mr. Larue informed this QA that he is issuing NCR against ZPMC for not fixing the gouges prior to install these flanges. FCAW (1G) PJP welding between flange and web plate was on going when this anomaly was discovered. See photo below.

Flange to web plate fillet weld removal by carbon air arcing on floor beam sub-assembly FB011-005-009 and FB011-005-017 due to noted elongated and rounded surface porosity was observed. During the removal process, the carbon arc operator went 5.0mm too deep and 12.0mm wide into the web plate base metal. Since this is more than the Code ASTM A6 Paragraph 9.2.1allowed, ABF Inspector informed ZPMC to make request to Caltrans for

base metal repair. See photo below.

QA Inspector J. Lizardo randomly observed ZPMC qualified welder Liu Kai Ge ID #044830 groove welding fill pass on (flange to web plate) tee joint. Mr. Liu were observed welding in the 2G (horizontal) position utilizing a flux corded arc welding (FCAW) process with a 1.4mm diameter electrode, filler metal brand E71T-1, class Supercored 71H, semi automatic at floor beam FB009-005-045. QA Inspector Lizardo observed the ZPMC QC CWI Inspector Huang Wen Pang verifying that the welding parameters and pre-heat were in accordance with the Welding Procedure Specification (WPS).

The QA Inspector randomly observed ZPMC welder Chen Xi Feng ID #052692, utilizing the Submerged Arc Welding (SAW) Process in the 1G Position (Flat Groove) with ZPMC WPS WPS-B-T-2221-B-L2c-S-1, to weld the fill pass in plate splice butt joint FB023-001-081/101 floor beam. The QA Inspector randomly observed ZPMC CWI Hu Wei Qing monitoring weld parameters. The QA Inspector also randomly monitored weld parameters and recorded them as follows: 500 amps, 31.0 volts with a travel speed of 436 mm per minute. The weld parameters appeared to comply with contract requirements.

FCAW fillet welding (2F and 3F) was observed on stiffener to web plate on various floor beam sub-assemblies FB011-005-007/008 and FB011-005-019/020. ZPMC welder working on these was identified as Zhuo Jibo ID# 065564. ZPMC CWI Hu Wei Qing was noted monitoring the parameters. Tack welding/fit-up was continuing on stiffener to web plate of floor beam FB010-001-001 and FB016-011-009/046 using electrode TL-508. During tack welding/fit-up of these sub-assemblies, paint coating was removed, close and tight gap noted and preheating was used. Carbon air arcing/excavation also observed to remove (UT) defect on CJP weld joint of floor beam FB016-013-043.

This QA randomly observed heat straightening of floor beam FB028-002 weld number 078, 079, 080, 081, 101 and 108 due to welding distortion. Oxy-acetylene was used and less than 600 degree C thermal heat input was implemented following procedure HSR1(B)-1090.

Bay 8: Tower Diaphragms

The QA Inspector randomly observed ZPMC welder Xu Pei Pei ID Number 050323, utilizing the SAW Process in the 1G (Flat Groove) Position with ZPMC WPS WPS-B-T-3221-B-U3c-S-1, to weld the root and fill pass on plate butt splice of Tower Diaphragm WSD1-SA301A/B-11A/12A. The QA Inspector randomly observed ZPMC CWI Lvliqing, monitoring weld parameters. The QA Inspector also randomly monitored weld parameters and recorded them as follows: 590 amps, 29.8 volts with a travel speed of 450 mm per minute. Weld parameters appeared to comply with contract requirements.

This QA Inspector observed bevel cutting to 45-degree two sides of 14mm thick plates intended for various longitudinal diaphragms LD15A, LD16A LD16E and LD15E.

WELDING INSPECTION REPORT

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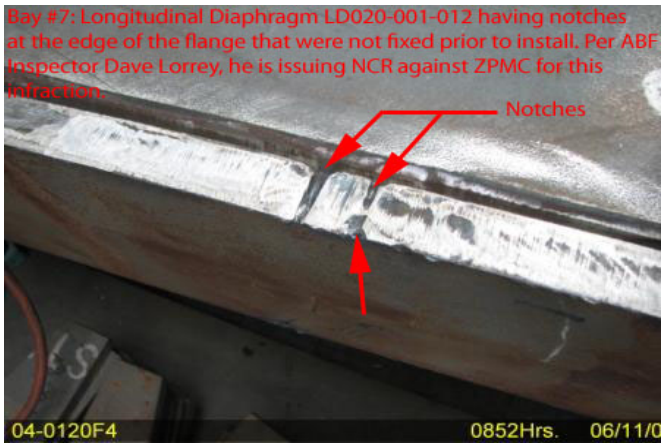

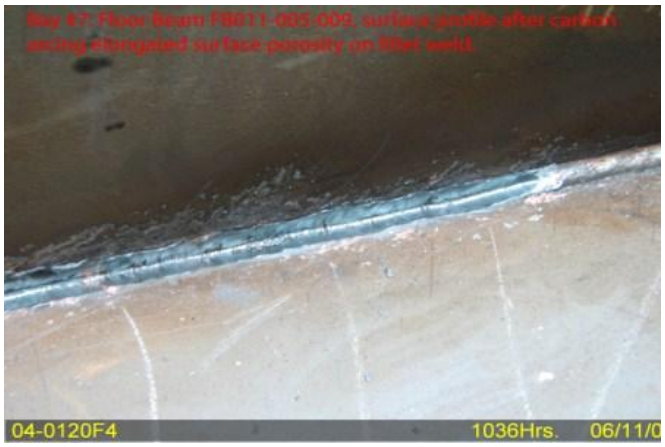

Summary of Conversations:

No significant conversation ocurred today.

Comments

This report is for the purpose of determining conformance with the contract documents and is not for the purpose of making repair or fit for purpose recommendations. Should you require recommendations concerning repairs or remedial efforts please contact Mazen Wahbeh, (818) 292-0659, who represents the Office of Structural Materials for your project.

Inspected By:	Lizardo,Joselito	Quality Assurance Inspector
Reviewed By:	Cochran,Jim	QA Reviewer